



U.S. Department of Transportation
Federal Highway Administration

Priority, Market-Ready Technologies and Innovations

Red Light Cameras

Problem: Intersection crashes account for more than 40 percent of all crashes

Intersection safety is a serious problem in the United States, and it is one of the Federal Highway Administration's (FHWA) top priorities.

The National Highway Traffic Safety Administration reports that about 6.4 million crashes occurred on the Nation's roadways in 2000. Approximately 40 percent of all crashes are intersection-related. Red-light-running (RLR) causes more than 180,000 crashes every year, resulting in approximately 1,000 deaths and 90,000 injuries a year. The number of fatal motor vehicle crashes at traffic signals is rising faster than any other type of fatal crash nationwide.

When does RLR occur?

RLR occurs when a driver enters an intersection after the traffic signal has turned red. The traditional way of enforcing this violation is to station a patrol vehicle near an intersection. This method is dangerous for the officer, expensive to localities, and drains valuable police resources. Red light cameras can supplement police efforts by being where officers cannot be all the time.

Putting It in Perspective

- Motorists are more likely to be injured in crashes involving RLR than in other types of crashes. Occupant injuries occurred in 45 percent of the RLR crashes, compared to 30 percent for other crash types.
- According to a survey conducted by U. S. Department of Transportation and the American Trauma Society, 63 percent of Americans witness a RLR incident more than once a week. One in three Americans knows someone who has been injured or killed because of a red light runner.

Solution: Red light camera technology can make intersections safer

What are red light cameras?

Red light cameras detect a motor vehicle that passes over sensors in the pavement after a traffic signal has turned red. The sensors are connected to computers in high-speed cameras, which take two photographs of the violation. The first photo is taken of the front of the vehicle when it enters the intersection, and the second is taken when the vehicle is in the intersection.

Law enforcement officials review the photograph, and in many localities, a citation is mailed to the registered owner of the vehicle. The owner can challenge the citation if he or she was not the driver at the time of the violation.

Successful Applications: Research demonstrates crash reductions

Based on a survey conducted as a part of a National Cooperative Highway Research Program synthesis project, a majority of jurisdictions reported downward trends in RLR-related violations and crashes because of red light cameras.

- In Fairfax, VA, violations were reduced by 41 percent after 1 year of camera enforcement.
- San Francisco, CA and Los Angeles, CA realized a 68- and 92-percent reduction in violations, respectively.
- In Charlotte, NC, RLR violations were reduced by more than 70 percent during the first year of operation.

According to FHWA's *Guidance for Using Red Light Cameras*, the following critical elements should be considered while installing red light camera systems:

- Conduct an engineering study before considering camera installation.
- Evaluate effective engineering and education alternatives before considering photo-enforcement.
- Make sure the red light camera program is engineered and installed properly.
- Measure, document, and make safety results available.
- Ensure complete oversight and supervision by public agencies.
- Avoid compensating vendors based on the number of citations.
- Include an ongoing photo-enforcement public education program.

Benefits

Automated enforcement systems can be effective and reliable tools to help reduce the number of RLR violations and associated crashes.

Additional Resources

FHWA has published a comprehensive publication, *Guidance for Using Red Light Cameras*. This document provides information to State and local agencies on how to initiate and operate an appropriate red light camera program. Call 202-366-5915 to order Publications No. FHWA-SA-03-018, or download this guide from the Web at <http://safety.fhwa.dot.gov/drlcguide/index.htm>.

Visit <http://safety.fhwa.dot.gov/srlr.htm> for more information on how to prevent RLR.

For more information, contact:

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